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| Preparing a Proposal Budget: Lab  Course Companion Book |
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Contents

[Learning Objectives 3](#_Toc83128928)

[Proposal Budgeting Basics Recap 3](#_Toc83128929)

[Budget Overview 3](#_Toc83128930)

[Common Budget Formulas 3](#_Toc83128931)

[Effort Commitment 3](#_Toc83128932)

[Annualized Salary 3](#_Toc83128933)

[Equipment and Capital Assets 4](#_Toc83128934)

[Characteristics of Equipment and Capital Assets 4](#_Toc83128935)

[Subawards 4](#_Toc83128936)

[Cost Sharing 5](#_Toc83128937)

[Facilities and Administration/Indirect Costs 5](#_Toc83128938)

[F&A/Indirect Cost Bases 6](#_Toc83128939)

[Sponsor and Program Guidelines 6](#_Toc83128940)

[Discuss/Plan the Budget with the Principal Investigator 7](#_Toc83128941)

[RFP SCENARIO: Sponsor Budget Guidelines (NSF 18-581) 7](#_Toc83128942)

[Activity 1: Getting Started 8](#_Toc83128943)

[A. Interpret Sponsor Budget Guidelines 8](#_Toc83128944)

[Budget Scenario 8](#_Toc83128945)

[B. Interpret PI Instructions/Information 9](#_Toc83128946)

[Activity 2: Preparing the Budget 11](#_Toc83128947)

[A. Header Information 11](#_Toc83128948)

[B. Personnel Section 11](#_Toc83128949)

[1. Annualized Salary 11](#_Toc83128950)

[2. Salary to Charge to the Grant (Effort Commitment) 11](#_Toc83128951)

[3. Benefits 12](#_Toc83128952)

[Split Rates 13](#_Toc83128953)

[Calendar Examples 13](#_Toc83128954)

[Let’s Practice! *Calculate F&A Costs with Split Rates* 14](#_Toc83128955)

[C. Equipment Section 15](#_Toc83128956)

[D. Travel Section 15](#_Toc83128957)

[E. Other Direct Costs Section 15](#_Toc83128958)

[F. Indirect/F&A Costs Section 15](#_Toc83128959)

[Budget Justifications 16](#_Toc83128960)

[Writing a Budget Justification 17](#_Toc83128961)

[*Let’s Practice!* Match the Budget and Budget Justification 18](#_Toc83128962)

[Sample Budget 19](#_Toc83128963)

[Budget Justification 1 20](#_Toc83128965)

[Budget Justification 2 21](#_Toc83128966)

[Budget Justification 3 22](#_Toc83128967)

[Resources 24](#_Toc83128968)

[Common Acronyms 24](#_Toc83128969)

[Websites and Online Documents 25](#_Toc83128970)

# Learning Objectives

After today’s class you should be able to:

* Compile the budget components into a cohesive budget
* Perform common budget calculations
* Develop a budget justification

# Proposal Budgeting Basics Recap

## Budget Overview

Per Merriam-Webster’s dictionary, a budget is “a plan for the coordination of resources and expenditures” (Merriam-Webster, 2019). A proposal Budget is the Principal Investigator’s **best** **estimate** of the expenses needed to conduct the project. A Budget must be cohesive or “…integrate(ion of) diverse elements, relationships and values” (Merriam-Webster, 2019). A cohesive Budget includes appropriately categorized cost line items and matches the Scope of Work and the Budget Justification.

## Common Budget Formulas

### Effort Commitment

The Principal Investigator is responsible for identifying how much effort he/she will commit to the project. Sponsors may require that effort is reported as a percent of annual commitment or by the number of person months he/she will commit annually. One of the most common misconceptions about effort on sponsored projects is that it is equal to FTE. This may be true for staff or other personnel (such as programmers or lab technicians) but not for senior personnel. Regardless of the appointment percent or the number of hours a faculty member works, 100% effort equals all the activities for which they are compensated by the university. If the Principal Investigator does not have a 12-month appointment **or** they will provide a different amount of effort in certain months, such as Academic Verses Summer month, their effort commitment will need to be calculated as follows.

#### Basic Annual Effort Commitment %

#### Annual Effort Person-Months

Some sponsors, such as the National Institutes of Health (NIH), require annual effort commitment be reported in Person-months format. If the sponsor requires effort in Person-months, the Total Months Worked should reflect the Total Months Worked in the project period.

#### Complex Annual Effort Commitment %

A person may commitment different levels of effort in specific months of a project year. For example, an investigator may indicate they will commitment once % of effort during the Academic Months and a different % during the Summer Months.

### Annualized Salary

Salary is often annualized at UC Davis to determine annual effort commitment and help determine if salary exceeds a sponsor-imposed salary cap such as the National Institutes of Health (NIH) cap. Annualized salary is a person’s salary over 12 months and is different than someone’s 9- or 11-month appointment.

## Equipment and Capital Assets

Correctly identifying equipment and capital assets on the proposal budget is critical as they are not subject to indirect costs when using the Modified Total Direct Costs (MTDC) base.

### Characteristics of Equipment and Capital Assets

|  |  |  |
| --- | --- | --- |
| **Equipment** | **Software** | **Renovations/Facilities Improvements** |
| * Capitalized and excluded from F&A * Non-expendable * Standalone * Normal useful life is 1 year or more * Cost is more than $5,000 | * Capitalized and excluded from F&A if:   + Software purchase price is $5,000 or more per copy   + Licenses where no period mentioned if the cost is more than $5,000 per license and useful life exceeds 1 year   + Included as hardware costs * Treated as supplies and subject to F&A if:   + Annual license fees and maintenance costs | * Capitalized and excluded from F&A * Improvements or betterments * Cost is more than $35,000 |

## Subawards

Subawards are agreements that are influenced by the prime agreement. In a subaward arrangement, an organization other than the prime applicant is performing a portion of the project and:

* Their Scope of Work is intellectually significant and separable from the overall project’s programmatic effort,
* They have programmatic decision making,
* Their work could result in the development of intellectual property or publishable results and/or
* They will need animal and/or human subjects’ approval.

UC Davis treats incoming subawards the same as all other awards. However, outgoing subawards have different indirect cost treatment than other expenses. For non-University of California organizations, **only the** **first $25,000 of each** outgoing subaward is subject to indirect (F&A) costs if using the MTDC basis. No indirect costs are calculated on subawards to another University of California campus because we are all under the umbrella of the UC system, and therefore cannot double charge the sponsor for indirect costs.

## Cost Sharing

Cost sharing is the contribution of resources- often money- towards the completion of a project by someone other than the funding sponsor. It is important to read all sponsor guidelines as the sponsor will indicate if cost sharing is allowed or even required. However, note that the University of California, Davis **strongly discourages voluntary cost sharing**, or cost sharing that is not required.

Cost sharing may be personnel effort, money or an item or service. Cost sharing may be provided in the form of cash matching or be in-kind. In-kind contributions must be able to be valuated but do not appear on the financial ledgers.

Because Sponsored Programs does not have the delegation of authority to commit university resources, Sponsored Programs must ensure documentation of cost sharing commitments is in place before approving the proposal for submission to, and accepting the award from, the sponsor. Review the *Guidance on Submitting Proposals with Cost Sharing* (<https://research.ucdavis.edu/wp-content/uploads/Cost-Sharing-Guidance_060418.pdf>) prepared by Sponsored Programs.

The following items **may not** be cost shared:

1. Existing equipment
2. Costs not associated with the project
3. Costs paid for by other grants or previously cost shared

## Facilities and Administration/Indirect Costs

Once you determine the correct Facilities and Administration (F&A) Rate and Base to use, calculate the F&A/Indirect Costs for the project. The OR Budget Template automates these calculations based on selections made regarding the Activity Type. Select the F&A Rate based on the type of activity, effective period and whether most of the activities are on or off campus.

To calculate F&A or indirect costs:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Effective Period** | **On-Campus** | **Off-Campus** | **Base** |
| Organized Research | 07/01/16 – 06/30/**22** | 57% | 26% | MTDC |
| 07/01/**22** – 06/30/**23** | 59.5% | 26% | MTDC |
| 07/01/**23** – 06/30/**24** | 60% | 26% | MTDC |
| 07/01/**24** – 06/30/**25** | 61% | 26% | MTDC |
| Other Sponsored Activities | 07/01/16 – 06/30/**22** | 39% | 25% | MTDC |
| 07/01/**22** – 06/30/**25** | 42.5% | 26% | MTDC |
| Clinical Trials (industry sponsored) | February 1, 2006 and beyond | 32% | 32% | TDC |
| Instruction | 07/01/13 – 06/30/25 | 50% | 26% | MTDC |
| Primate Center | 07/01/13 – 06/30/**22** | 54.4% | 54.4% | MTDC |
| 07/01/**22** – 06/30/**25** | 57.8% | 57.8% | MTDC |
| State of California | 07/01/19 – 06/30/**22** | 30% | 25% | MTDC |
| 07/01/**22** – 06/30/**23** | 35% | 25% | MTDC |
| 07/01/**23** and beyond | 40% | 25% | MTDC |

### F&A/Indirect Cost Bases

The formula to use for calculating the indirect costs is determined by the base used.

1. Modified Total Direct Costs (MTDC)
   1. Most commonly used at UC Davis.
   2. Excludes equipment, capital expenditures, certain recharges for patient care, student tuition remission, rental costs of off-site facilities, scholarships and fellowships as well as the portion of each subgrant and subcontract in excess of $25,000.
   3. Formula:
2. Total Direct Costs (TDC)
   1. Includes all direct costs.
   2. Formula:
3. Total Costs (TC)
   1. Includes all costs
   2. Formula if Direct Costs are known:
   3. Formula if Direct Costs are unknown:

***Reminder:*** *Subaward costs to other UCs are always excluded from the base even when using TDC and TC calculations.*

## Sponsor and Program Guidelines

Sponsors issue guidance on proposal requirements. It is critical follow all sponsor guidelines as not doing so could result in the proposal being rejected by the sponsor without review.

Guidelines are often found in the following locations.

1. Solicitation
2. Sponsor website
3. Sponsor application guide

Some of the key guidelines to look for include:

1. Budget limits such as caps on:
   1. Direct Costs
   2. Specific categories
2. Allowable, required and unallowable budget items (costs)
3. Cost-sharing requirements
4. Facilities and Administration (F&A)/Indirect Cost Rate
5. F&A/Indirect Cost Base
   1. Modified Total Direct Costs (MTDC)
   2. Total Direct Costs (TDC)
   3. Total Costs (TC)

Consider using a checklist, such as the *Call for Proposals Checklist* (<https://research.ucdavis.edu/wp-content/uploads/03-Call-for-Proposals-Checklist.pdf>) while reviewing the various sponsor guidelines to help identify important information.

## Discuss/Plan the Budget with the Principal Investigator

The Principal Investigator (PI) is ultimately responsible for the project and is in the best position provide guidance on preparing the proposal budget.

Ask the PI to identify budget line items to include in the budget and ask follow-up clarifying questions before ending the discussion.

After your discussion with the PI, determine the appropriate budget categories that the budget line items identified by the PI fit in.

Then evaluate those identified budget categories for:

1. Allowability
2. Allocability
3. Reasonability

Consider using a checklist, such as the *New Proposal Checklist* (<https://research.ucdavis.edu/wp-content/uploads/02-New-Proposal-Checklist.pdf>) to organize your discussion with the PI.

# RFP SCENARIO: Sponsor Budget Guidelines (NSF 18-581)

III. AWARD INFORMATION

**Award size:** Under this solicitation, the maximum total (for all years) award size is $2.5 million, including indirect costs. US-UK Collaborative Projects can request additional funding for the UK component of the project. The minimum award size is $1.5 million total project costs for all years, or $1.0 million for the US component of US-UK, US-Israel and US-China Collaborative Projects. For US-Israel Collaborative Projects, the maximum award size for the Israeli portion is $70,000/year. For US-China Collaborative Projects, the maximum award size for the Chinese portion is ¥4.5M total project costs for all years.

**Award duration:**The maximum award duration is five years.

**RCN proposals**: The maximum award size for RCN proposals is $500,000 as per the RCN solicitation. For US-UK Collaborative RCN proposals, the maximum award size for the US component is $500,000.

V. B. Budgetary Information

**Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

**Other Budgetary Limitations:**

EEID projects must have a minimum budget of $1,500,000 in total project costs for all years; US-UK Collaborative, US-Israel, and US-China Collaborative projects must have a minimum budget of $1,000,000 in total project costs for all years. Research that falls within the scope of the EEID initiative but with project aims that do not require budgets of this magnitude should be directed to the appropriate core program.

**Budget Preparation Instructions:**

**Subawards**

In accordance with the applicable award terms and conditions, proposers are reminded of their responsibilities with regard to subawardees. Should an award be made, the primary awardee is responsible for ensuring compliance with the appropriate terms and conditions to, as well as the management and oversight of, any subawardees on the project, including any foreign subawardees.

# Activity 1: Getting Started

## A. Interpret Sponsor Budget Guidelines

|  |  |
| --- | --- |
| Question | Answer |
| 1. What is the maximum award duration? | Click or tap here to enter text. |
| 2. Is cost sharing allowed and/or required? | Click or tap here to enter text. |
| 3. What is the maximum budget size? | Click or tap here to enter text. |
| 4. What is the minimum award size? | 1. Total project costs for all years: Click or tap here to enter text. 2. US Component of US-UK Collaborative Projects: Click or tap here to enter text. 3. US Component of the US-Israel Collaborative Projects: Click or tap here to enter text. |

# Budget Scenario

Professor L.B. “Jeff” Jeffries from Chemistry has asked you to draft three-year budget for a proposal to the National Science Foundation (NSF) Ecology and Evolution of Infectious Disease (EEID) Program. The proposal is due to NSF on November 20, 2021.

Professor Jeffries has provided the following information.

* The purpose of the project is to conduct basic research on malaria with collaborators in the UK. All of the work will be conducted on campus.
* The projected start date will be October 1, 2022, and the projected end date is September 30, 2025.
* Professor Jeffries will be the PI and will commit 20% effort on the proposed project during the academic year and 10% effort during the summer. He is paid $131,000 per year and has an approved 2% merit increase effective December 1, 2021.
  + Professor Jeffries has a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer.
  + Escalate his salary by 3% each FY in budget years 1 and 2.
* Theresa Doyle, a post-doctoral researcher (post doc) will commit 50% effort on the proposed project and her current annual salary is $53,184.
  + Post-docs work on a calendar year schedule.
  + Escalate her salary by 3% each FY in budget years 1 and 2.
* A non-resident graduate student researcher (GSR) III will be hired and will begin working on the start date of the project. The GSR III will be attending classes full time during Winter, Spring, and Fall Quarters. The GSR will contribute 50% effort during the academic year on this project. The GSR will not be attending Summer Session, and will instead work on this project full-time. Current annual salary for a GSR III is $48,144.
  + Student fees should be escalated by 10% per FY.
* Fishers Scientific Bio-Tek Precision 2000 Automated Microplate Pipetting System (Catalog list price of $16,000) to be purchased in the first PY.
  + You have obtained a quote from Fisher Scientific (CA Company). For the purposes of this exercise, calculate an additional 20% of the catalog list price for shipping, handling and sales tax.
* DNA Sorting Machine (Catalog list price of $25,000) in the second PY.
  + You have obtained a quote from Fisher Scientific (CA Company). For the purposes of this exercise, calculate an additional 20% of the catalog list price for shipping, handling and sales tax.
* Professor Jeffries’ will travel to meet with his collaborators in the UK twice each project year for an estimated total of $2,500 per trip.
  + Theresa Doyle will also attend one trip per year; same estimate total.
* Professor Jeffries’ will also attend a scientific conference in year 2 and again in year 3 to present on the research results. The conference will be in D.C. and his estimated trip cost is $1,500.
* Materials and Supplies:
  + Laboratory supplies: $1,500 each year
  + Computer dedicated to lab analysis for this project: $3,000 in year one
  + Purchase of a specific strain of malaria in year one: $2,000
  + Cattle supplies: $3,000 in year 1, $2000 in year 2 and $5,000 in year 3
* Publication Costs
  + $800 in years 2 and 3.
* Consultant: Charlie Apple is renowned cattle rancher and will serve as a consultant regarding the care and behavior of the cows to be studied. She will charge us $5,000 in each of the 3 years.
* The project will include a subaward to Happy Cows Industries in all years. Happy Cows Industries will receive $30,000 in Year 1, $45,000 in Year 2, and $40,000 in Year 3.
* We will also use the services of the Genome Center to perform data analysis on the genomes of non-infected and of infected cows. This will cost us $30,000 in each of the 3 years.

## B. Interpret PI Instructions/Information

1. Categorize the budget line items into the appropriate Budget Categories below.

|  |  |
| --- | --- |
| Budget Category | Line Items |
| Click or tap here to enter text. | Salary  Dr. Jeffries  Theresa Doyle  GSR TBD  Benefits  Dr. Jeffries  Theresa Doyle  GSR TBD |
| Click or tap here to enter text. | Bio-Tek Precision 2000 Automated Pipetting System  DNA Sorting Machine (including taxes, shipping, handling) |
| Click or tap here to enter text. | Meeting with collaborators in UK (twice each year)  Scientific conference in D.C. |
| Click or tap here to enter text. | Laboratory supplies  Computer for lab  Malaria  Cattle supplies |
| Click or tap here to enter text. | Publication Costs |
| Click or tap here to enter text. | Charlie Apple |
| Click or tap here to enter text. | Happy Cow Industries |
| Click or tap here to enter text. | Graduate Student Researcher (GSR) TBD |
| Click or tap here to enter text. | Genome Center Costs |

1. Identify the following:
2. Project Start Date: Click or tap here to enter text.
3. Project End Date: Click or tap here to enter text.
4. NIH or non-NIH Sponsor: Click or tap here to enter text.
5. Check the box next to correct the F&A Rate and Base below as of the start of the first year of the project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Effective Period | On-Campus | Off-Campus | Base |
| Organized Research | 07/01/16 – 06/30/**22** | 57% | 26% | MTDC |
| 07/01/**22** – 06/30/**23** | 59.5% | 26% | MTDC |
| 07/01/**23** – 06/30/**24** | 60% | 26% | MTDC |
| 07/01/**24** – 06/30/**25** | 61% | 26% | MTDC |
| Other Sponsored Activities | 07/01/16 – 06/30/**22** | 39% | 25% | MTDC |
| 07/01/**22** – 06/30/**25** | 42.5% | 26% | MTDC |
| Clinical Trials (industry sponsored) | February 1, 2006 and beyond | 32% | 32% | TDC |
| Instruction | 07/01/13 – 06/30/25 | 50% | 26% | MTDC |
| Primate Center | 07/01/13 – 06/30/**22** | 54.4% | 54.4% | MTDC |
| 07/01/**22** – 06/30/**25** | 57.8% | 57.8% | MTDC |
| State of California | 07/01/19 – 06/30/**22** | 30% | 25% | MTDC |
| 07/01/**22** – 06/30/**23** | 35% | 25% | MTDC |
| 07/01/**23** and beyond | 40% | 25% | MTDC |

# Activity 2: Preparing the Budget

You may want to refer to the previous activity for the appropriate lines items to place in budget section below. Some people start by adding the line items and then going back and entering the budget figures.

## A. Header Information

Open the **Budget Spreadsheet** for the class activity and enter the following information.

1. Start Date: Click or tap here to enter text.
2. End Date: Click or tap here to enter text.
3. NIH or non-NIH: Click or tap here to enter text.

## B. Personnel Section

### 1. Annualized Salary

Professor Jeffries is paid $131,000 per year and will receive a 2% merit increase before the project start date. He has a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer.

1. Calculate his new salary, factoring in the 2% merit increase.

$131,000 x 1.02 = $\_\_\_\_\_\_\_\_\_\_\_\_\_ *(you can click and enter information on these lines)*

1. Calculate his monthly salary

$$\_\_\_\_\_\_\_\_\_\_\_ ÷ \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his annualized salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ x 12 = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his base salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his summer salary.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **On the Budget Spreadsheet**, enter the following information for all personnel (details in the Budget Scenario on page 3 of the Activity Packet).
   1. Name and role (note enter two lines for the PI only)
   2. Base Salary
   3. Summer Salary

### 2. Salary to Charge to the Grant (Effort Commitment)

Professor Jeffries will be the PI and will commit 20% effort on the proposed project during the academic year and 10% effort during the summer. He has as a 9-month academic year appointment, and is an Academic Senate faculty member. He can work 3 months during the summer. What is his total **Annualized Effort** commitment for this project?

1. Calculate his total months worked.

\_\_\_\_\_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_\_\_\_\_= \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate his academic year effort.

(\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_%) ÷ 12 = \_\_\_\_\_\_\_\_\_\_\_\_\_%

1. Calculate her summer months’ effort.

(\_\_\_\_\_\_\_\_\_\_\_\_\_ ×\_\_\_\_\_\_\_\_\_\_\_\_\_%) ÷ 12 = \_\_\_\_\_\_\_\_\_\_\_\_\_%

1. **On the Budget Spreadsheet**:
   1. Enter the Academic Months/Year and Summer Months effort commitment for the Principal Investigator in each project year/budget period.
   2. Indicate the escalation type and percentage (at top right section).
   3. Select the Salary Basis/Type.
2. Convert his annual effort to Person-Months format.

12 × 15% = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months in the Academic Months

12 × 2.5% = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months in the Summer Months

\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_ Person-Months (annual)

1. **On the Budget Spreadsheet**, complete the Effort information for each person on the budget:
   1. Effort Commitment % for each project year/budget period.
   2. Indicate the escalation type and percentage (at top right section).
   3. Select the Salary Basis/Type.

### 3. Benefits

**On the Budget Spreadsheet**, select the correct Benefit Group for each person. Assume that the correct rate for Professor Jeffries’ summer salary is Faculty Summer – A.

|  |  |  |  |
| --- | --- | --- | --- |
| **CBR Group** | **Personnel Category** | **FY 20/21 Rate** | **FY 21/22 Rate** |
| HCOMP Faculty & SMG | SOM faculty and Senior Management | 25.5% | 25.9% |
| Nurses and Physicians | Nurses, Nurse Practitioners and Clinical Physicians | 34.1% | 34.9% |
| Faculty, Acad, MSP, Safety | Non-SOM faculty; Other Academic appointment such as project scientists and specialists; MSP positions such as directors; and safety services such as Fire and Police officers. | 38.1% | 38.3% |
| Faculty Summer Salary | Faculty Summer Salary | 9.4% | 9.9% |
| All Other Staff | Staff including analysts, SRAs, programmers | 50.9% | 49.5% |
| Service Staff | E.g., Janitors | 65.1% | 65.5% |
| Postdoc Employees | Postdocs | 23.5% | 19.5% |
| Grad and Undergrad | GSRs and Undergrads | 1.9% | 1.6% |
| Limited Benefits | Employees not eligible for full benefits (e.g., FTE % is too low) | 14.8% | 10.0% |
| No Benefit Eligibility | E.g., not eligible based on appointment type | 3.6% | 3.0% |

# Split Rates

UC Davis fiscal years run from July 1st through June 30th. All rates — both fringe and indirect — are valid for this period of time. To ensure you have enough funding to pay personnel costs during a project period that spans multiple fiscal years, use split rate calculations.

## Calendar Examples

**Steps:**

1. Calculate one month of the costs.
2. Calculate the costs at the first rate.
   1. Determine the number of months to charge at the first rate.
      1. How many months occur during the first FY of the project period (i.e., before June 30th?
   2. Multiply one month of the costs by the number of months to be charged 120at the first rate, then multiply that by the first rate.
3. Calculate the costs at the second rate.
   1. Determine the number of months to charge at the second rate.
      1. How many months occur during the second FY of the project period (i.e., on/after July 1st)?
   2. Multiply one month of the costs by the number of months to be charged at the second rate, and then multiply that by the second rate.
4. Calculate the total costs at both rates.
   1. Add the costs at the first rate to the costs at the second rate.

*SHORTCUT:* Alternatively, the Split Rate costs can be calculated in one step as follows.

## Let’s Practice! *Calculate F&A Costs with Split Rates*

You are working on a budget for research project with a start date of September 1, 2021 and end date of August 31, 2022. The appropriate F&A Rate is 57% for FY 2021-22 and 58% for FY 2022-2023 with an MTDC Base. The MTDC is $300,000. **What are the F&A Costs?**

1. Determine the months at the first rate. How many months occur before 6/30/2022?

Click or tap here to enter text.

1. Calculate the F&A Costs at Rate 1.

($\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ 12) × \_\_\_\_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Determine number of month to charge at second rate. How many months occur on/after 7/1/2022?

Click or tap here to enter text.

1. Calculate the F&A Costs at Rate 2.

($\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ 12) × \_\_\_\_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_\_\_\_ = $\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate the F&A costs at both rates.

$\_\_\_\_\_\_\_\_\_\_\_\_\_ + $\_\_\_\_\_\_\_\_\_\_\_\_\_= $\_\_\_\_\_\_\_\_\_\_\_\_\_

## C. Equipment Section

Based on the Budget Scenario provided by Professor Jeffries and the information we discussed earlier regarding classifying items as equipment:

1. Determine if any equipment should be included in the budget.
2. If so, add the appropriate line item(s) to the **Budget Spreadsheet**.

## D. Travel Section

Based on the Budget Scenario provided by Professor Jeffries:

1. Determine if any travel should be included in the budget.
2. If so, add the appropriate line item(s) to the **Budget Spreadsheet**.

## E. Other Direct Costs Section

Based on the Budget Scenario provided by Professor Jeffries, determine for each of the following sections whether items should be included, add them on the appropriate line in the **Budget Spreadsheet**, and add each of the costs, as appropriate:

* Materials and Supplies
* Publication Costs
* Consultant Services
* Subawards
* GSR Tuition/Fees (*Note: If a graduate student is listed as personnel, include their GSR tuition and fees in the budget.*)
* Other Expenses

## F. Indirect/F&A Costs Section

**On the Budget Spreadsheet**:

Select the Indirect Cost Rate Type (refer to your selection in Activity 1.B.).

# Budget Justifications

A budget justification is a written description/explanation of the project costs. The budget justification should:

1. Explain why costs are necessary.
2. Show that costs are reasonable.
3. Demonstrate that costs are consistent with sponsor and university polices.
4. Describe ambiguous categories.
5. Explain why costs that might generally be considered indirect costs are specific to the project.
6. Explain the costing methods used.

A budget justification is an important component of the proposal because it:

1. Is required by **most** sponsors.
2. Is strongly encouraged by UC Davis even when not required by the sponsor.
3. Helps reviewers and auditors understand the reasonableness of the costs.
4. May mitigate budget cuts at the award time.
5. Provides additional “space” to describe personnel roles and expertise.

The following categories should be justified, as well as any categories that are ambiguous, include costs that might normally be considered indirect **or** have fluctuating costs from one budget period/year to another.

1. Materials and Supplies
   * Description
   * Relation to project (necessity)
   * Costing methods
2. Personnel
   * Title
   * Effort (% or Person-months)
   * Role on project (expertise)
   * Benefits
3. Equipment
   * Cost
   * Necessity
   * Costing methods
     + Quotes/Vendors
4. Travel
   * Description and cost of each trip
   * Number of travelers
   * Purpose related to the project
   * Costing method

## Writing a Budget Justification

Department contract and grant staff often assist Principal Investigators in writing budget justifications as part of the proposal preparation process. Follow the steps below to write a budget justification:

## *Let’s Practice!* Match the Budget and Budget Justification

Read the sample budget on the next page and the three budget justifications on subsequent pages.

Select the matching budget justification below.

* Budget Justification 1
* Budget Justification 2
* Budget Justification 3

# Sample Budget

## 

### Budget Justification 1

**Senior Personnel**

**Margarat Jonas, PI** (3.0 calendar months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-Investigator** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Equipment**

A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Participant Support Costs**

$6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

**Other Direct Costs**

**Materials and Supplies:**

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

### Budget Justification 2

**Senior Personnel**

**Margarat Jonas, PI** (1.5 academic months’ effort; 1.0 summer months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project. She will lead curriculum development, teach the curriculum, head the leadership team, and cooperate with evaluation. She will also lead efforts to coordinate among faculty on the advisory board and train additional faculty in curriculum implementation.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-Investigator** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Postdoctoral Researcher** (9.0 calendar months’ effort)

A postdoctoral researcher will work on the evaluation plan, create and administer surveys, and analyze the results and contribute to reporting.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Equipment**

A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Participant Support Costs**

**Trainee research supplies:** $6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

**Other Direct Costs**

**Materials and Supplies:**

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

**Other:**

**MediaWorks Recharges for creation of online resources—** $3,000 in year 1 and $1,000 in years 2 and 3 is budgeted for MediaWorks recharges ($91/hour) to create a website and online resources in support of the program.

**Recruitment expenses—** $600 in year 1 and $300 in years 2-5 is budgeted for trainee recruitment expenses including the creation and printing of recruitment flyers and meeting costs such as room rental, agenda creation, and online streaming fees.

**Indirect Costs**

Indirect Costs are calculated at UC Davis’s federally negotiated rate for instruction rate- 50% of Modified Total Direct Costs (MTDC). Per NSF policy, participant support costs are excluded from the indirect cost base.

### Budget Justification 3

**Senior Personnel**

**Margarat Jonas, PI** (1.5 academic months’ effort; 1.0 summer months’ effort)

Dr. Jonas will serve as PI for the project, providing oversight, administration, and management of the project. She will lead curriculum development, teach the curriculum, head the leadership team, and cooperate with evaluation. She will also lead efforts to coordinate among faculty on the advisory board and train additional faculty in curriculum implementation.

**Sarah McMurphy, Co-PI** (6.0 calendar months’ effort)

Dr. McMurphy will assist Dr. Jonas with oversight, administration, and management of the project. She will serve as the main coordination hub for the project in both logistical planning and intellectual organization. Her responsibilities will include organizing meetings and trainings, leading recruiting efforts, oversee communication and development of web materials, and liaising with evaluator. She will also take part in curriculum development and teaching of the curriculum.

**Timothy Chan, Co-Investigator** (0.5 summer months’ effort)

Dr. Chan will take part in curriculum development and teaching the curriculum. He will assist in identifying, recruiting, and training additional faculty to teach the curriculum and take part in the Advisory Board and leadership team.

**Susan Garcia, Academic Coordinator** (3.0 calendar months’ effort)

Dr. Garcia will chair the Advisory Board and coordinate the involvement of faculty from STEM disciplines. She will provide feedback on curriculum design and delivery, as well as assisting the evaluator in collecting feedback from STEM faculty.

**Postdoctoral Researcher** (9.0 calendar months’ effort)

A postdoctoral researcher will work on the evaluation plan, create and administer surveys, and analyze the results and contribute to reporting.

**Fringe Benefits**

Fringe benefits are calculated using UC Davis’s federally approved rates developed by UC Davis Costing and Policy, which are adjusted annually and calculated by title code and fiscal year.

**Travel**

**Conference Travel:** $1,500 is budgeted in years 2 through 5 to allow the PI or Co-PI to attend a relevant professional conference to disseminate information on the program and to collaborate.

**Other Direct Costs**

**Materials and Supplies:**

**Server –** A dedicated server will be purchased in year 1 to store project data and the program’s website. A dedicated service is necessary for data security and to ensure all features of the website are functional for collaboration. Costs for the server are estimated at $6,200 based on web quotations from the university’s approved vendor

**Supplies for trainers —** $3,000 per year is budgeted for supplies for trainers. Supplies will include mathematical design software licenses for modeling at $2,500 per year, and $500 per year for data storage and presentation materials.

**Other:**

**Assessment/Evaluation Costs —** $22,490 total over the 3 years of the project is budgeted for assessment and evaluation services. Pricing is based on current quotations and includes focus group sessions, interviews, qualitative analysis and summaries, meeting attendance, and reports.

**MediaWorks Recharges for creation of online resources—** $3,000 in year 1 and $1,000 in years 2 and 3 is budgeted for MediaWorks recharges ($91/hour) to create a website and online resources in support of the program.

**Recruitment expenses—** $600 in year 1 and $300 in years 2-5 is budgeted for trainee recruitment expenses including the creation and printing of recruitment flyers and meeting costs such as room rental, agenda creation, and online streaming fees.

**Trainee research supplies:** $6,500 in years 2 through 5 is budgeted for trainee research supplies to enable groups of trainees to undertake small research projects as a capstone to quarterly and year-long trainings.

**Indirect Costs**

Indirect Costs are calculated at UC Davis’s federally negotiated rate for instruction rate- 50% of Modified Total Direct Costs (MTDC). Per NSF policy, participant support costs are excluded from the indirect cost base.

# Resources

## Common Acronyms

* **BAA**: Broad Agency Announcement
* **BUA**: Biological Use Approval
* **CGA**: Contracts and Grants Accounting
* **COI**: Conflict of Interest
* **eRA**: Electronic Research Administration
* **F&A**: Facilities & Administrative rates; also referred to as indirect cost rate (IDC or ICR) or “overhead”
* **FOA**: Funding Opportunity Announcement
* **IACUC**: Institutional Animal Care and Use Committee
* **ICR**: Indirect Cost Rate
* **IDC**: Indirect costs
* **IP**: Intellectual Property
* **IPF**: Internal Processing Form (electronic Cayuse proposal/award/subaward document)
* **IRB**: Institutional Review Board
* **JIT**: “Just-in-Time” (i.e., immediate) proposal/award actions requested by a sponsor
* **MTDC**: Modified Total Direct Costs
* **NICRA**: Negotiated Indirect Cost Rate Agreement
* **PI**: Principal Investigator
* **RCR**: Responsible Conduct of Research
* **RFA**: Request for Applications
* **RFP**: Request for Proposals
* **RICE**: Research Integrity, Compliance and Ethics (formerly **RCI**: Research Compliance and Integrity)
* **SBIR**: Small Business Innovation Research
* **SPO**: Sponsored Programs Office in the Office of Research
* **STTR**: Small Business Technology Transfer
* **TC**: Total Costs
* **TDC**: Total Direct Costs

## Websites and Online Documents

* Accounting and Financial Services Effort Commitment and Cost Share Tracking: <http://afs.ucdavis.edu/systems/effort-commitment-system/effort-commitment-defined.html>
* Accounting & Financial Services site has additional information on calculating effort: <https://financeandbusiness.ucdavis.edu/systems/effort-commitment/scenarios>
* Call for Proposals Checklist: <http://research.ucdavis.edu/wp-content/uploads/03-Call-for-Proposals-Checklist.pdf>
* Cayuse SP and 424: <https://ucdavis.cayuse424.com>
* Code of Federal Regulations (CFR): <http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>
* Composite Benefit Rate schedule: <http://afs.ucdavis.edu/our_services/costing-policy-e-analysis/composite-benefit-rates/>
* Electronic Research Administration (eRA) systems (list): <https://research.ucdavis.edu/proposals-grants-contracts/spo/era/>
* Federal Cost Accounting Standards Board (CASB): <https://obamawhitehouse.archives.gov/omb/procurement_casb/>
* [Federal](http://sites.nationalacademies.org/PGA/fdp/index.htm) [Demonstration Partnership](http://sites.nationalacademies.org/PGA/fdp/index.htm) (FDP): http://thefdp.org/default/
* Guidance on Submitting Proposals with Cost Sharing: <https://research.ucdavis.edu/wp-content/uploads/Cost-Sharing-Guidance_060418.pdf>
* Guide to Research Compliance: <http://research.ucdavis.edu/wp-content/uploads/UCDavis_Guide_to_Research_Compliance_-20132.pdf>
* New Proposal Checklist: <https://research.ucdavis.edu/wp-content/uploads/02-New-Proposal-Checklist.pdf>
* NIH Person Month Information and Calculation: <https://nexus.od.nih.gov/all/2017/03/31/what-is-a-person-month-how-do-i-calculate-it/>
* NIH Policy regarding Patient Care Costs: <https://policymanual.nih.gov/6352-2>
* Office of Management and Budget Circulars: <https://www.whitehouse.gov/omb/information-for-agencies/circulars/>
* Office of Research Budget Templates and FAQs: <https://docs.or.ucdavis.edu/spo/>
* Office of Research Listservs: <http://research.ucdavis.edu/resources/listserv-subscriptions/>
* Office of Research Website: <http://research.ucdavis.edu>
* Preparing a Proposal Budget Toolkit: <https://research.ucdavis.edu/wp-content/uploads/Preparing-a-Proposal-Budget-Toolkit.pdf>
* Sponsored Programs Training pages: <https://research.ucdavis.edu/proposals-grants-contracts/spo/spo-training/>
* Sponsored Programs Website: <https://research.ucdavis.edu/proposals-grants-contracts/spo/>
* UC Davis F&A Rates: <https://research.ucdavis.edu/proposals-grants-contracts/helpful-links/indirect-cost-fringe-benefit-rates/>
* UC Davis Staff Salary Scales: <http://www.hr.ucdavis.edu/Salaryscales>
* UCOP Academic Salary Scales: <https://www.ucop.edu/academic-personnel-programs/compensation/index.html>
* UCOP Policy Analysis and Coordination Contract and Grant Manual: <http://www.ucop.edu/research-policy-analysis-coordination/resources-tools/contract-and-grant-manual/>